

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,823	12/07/2001	Ervin K. VanDenberg	1804-A	7542

27542 7590 12/04/2003

SAND & SEBOLT
AEGIS TOWER, SUITE 1100
4940 MUNSON STREET, NW
CANTON, OH 44718-3615

EXAMINER

DRAPER, DEANN L

ART UNIT	PAPER NUMBER
----------	--------------

3616

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,823

Applicant(s)

VANDENBERG, ERVIN K.

Examiner

Deanna L. Draper

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 . 6) ☐ Other: _____

Art Unit: 3616

Acknowledgements

The Information Disclosure Statement filed by the Applicant on February 11, 2002 is acknowledged.

Claim Objections

Claim 9 is objected to because of the following informalities: "the" should be inserted between "to" and "pivotally". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 19 disclose a diaphragm chamber with a pushrod extending therefrom and translatable when the movable wall is moved and also mention the translation of the push rod. It is unclear as to what is meant by saying that the push rod is "translatable". Clarification is necessary.

Claims 10 and 11 mention "the pivot arm", and state the first and second articulating arms are pivotally connected to "the pivot arm" as well as claiming that the second diaphragm chamber is rigidly mounted to "the pivot arm". It is unclear as to which "pivot arm" the claims are referring to, as it seems that from the drawings, different arms are being described. Claim 13

Art Unit: 3616

mentions “the arms”, in line 2 – is this the pivot arms or the articulating arms? Claim 16 recites “a pivot at the first and second ends of the articulating arms” – it is unclear as to what is being referred to by the “pivot”. Further clarification is necessary.

Claim 2 states that the “at least one diaphragm chamber has a first and second diaphragm chamber”, and Claims 8 and 9 disclose how the first and second diaphragm chambers are mounted. It is unclear as to how the “at least one diaphragm chamber” is divided into upper and lower chambers and also has a first and second diaphragm chamber. From the specification and drawings, it seems that the system has a first and second diaphragm chambers (122, 130 in Fig. 2) that each have upper and lower chambers. Further explanation is required.

Claims 17 and 30 recite the limitation “the attached wheel assemblies” in lines 1 – 2. Claim 17 also recites “the atmosphere” in line 9. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 5, 7, 17 – 21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell (US 5,015,004), and further in view of Schaeff (US 3,716,249). Mitchell discloses an elevating suspension system, including mounting means consisting of a mounting bracket (12)

Art Unit: 3616

rigidly affixed to a longitudinally extending frame member on a vehicle (14), articulating means consisting of a first (22) and a second (18) articulating arm, each having first end pivotally attached to the mounting bracket (see Fig. 6) and second ends pivotally attached to the vehicle axle (see Fig. 6), drive means consisting of first and second air lift springs (122— one on each side of the vehicle) interconnected to the lift axle suspension system such that movement of the translation means causes pivotal movement of the arms and axle attached thereto. Mitchell discloses the invention as claimed above, however does not disclose the lift springs to be diaphragm chambers including a translation means consisting of a push rod having a movable wall therein dividing the chambers into an upper and lower chambers and including a flexible bladder around the movable wall separating the chambers or an air inlet for pressurizing the chamber. Schaeff discloses a diaphragm chamber including a translation means consisting of a push rod (32 in Fig. 1) The diaphragm chambers include a translation means consisting of a push rod (102 in Fig. 6) pivotally connected to the end of a pivot arm (22 in Fig. 1) and having a movable wall (56 in Fig. 3) including a flexible bladder (146 in Fig. 3) around the wall (56 in Fig. 3) separating the chambers of the diaphragm into upper and lower chambers (see Fig. 3) and including an air inlet (50 in Fig. 1) for pressurizing the upper chamber which forces the flexible bladder toward the lower chamber in order to smoothly move the push rod. Therefore it would have been obvious to an ordinary person skilled in the art to modify Mitchell by using an equivalent actuator with a flexible bladder and air inlet as described in order to provide smooth movement of the push rod, as taught by Schaeff.

Art Unit: 3616

With respect to Claim 29, Mitchell discloses a pivot that includes a pin that is at least partially encapsulated by a dampening material that is at least partially encapsulated by the articulating arm (see – 90, 92, 96, 98, 152, 154, 184 and 188).

With respect to Claim 31, the recitation of “brake chambers” does not serve to distinguish.

Allowable Subject Matter

None of the prior art of record appears to read on Claims 6 – 16, 22 – 28, and 32 – 39 as understood by the examiner, and the subject matter of the claims appears to be allowable if the rejections under 35 USC 112 can be overcome. However upon applicant's amendment to overcome the rejections and objections raised by the examiner and upon the examiner's better understanding of the invention, a comparison of the prior art to the claims will again be made.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Richardson (US 6,062,578) discloses a trailing arm suspension. Raidel, II (US 4,773,670) discloses a suspension system. Overby et al. (US 6,092,819) discloses a suspension system. Kovach (US 2,052,309) discloses a shockproof undercarriage. Christenson (US 6,123,347) discloses a tag axle system. Richardson (US 6,073,946) discloses a trailing arm suspension. VanDenBerg (US 5,778,798) discloses a lift axle suspension for large volume trailers. Richardson (US 5,058,917) discloses a two-stage retractable suspension. Gideon et al. (US 6,158,750) discloses a lift axle assembly. Barlas et al. (US 5,785,345) discloses a means for

Art Unit: 3616


and method of controlling frame rise in vehicle suspensions. Keeler et al. (US 5,620,194) discloses a self-steering suspension lockout mechanism.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deanna L. Draper whose telephone number is 703-306-5939.


The examiner can normally be reached on Monday - Friday, 9:00 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 703-308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5771.


DEANNA L. DRAPER
PATENT EXAMINER

dld


PAUL N. DICKSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600